

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Shell Chemical LP
Shell Chemical LP - Norco Chemical Plant - East Site
Gasoline Hydrotreater Unit
Norco, St. Charles Parish, Louisiana
Agency Interest Number: 26336
Activity Number: PER20090003
Proposed Permit Number: 3078-V0**

I. APPLICANT

Company:

Shell Chemical LP - Norco Chemical Plant - East Site
PO Box 10
Norco, Louisiana 70079-0010

Facility:

Shell Chemical LP
15536 River Rd
Norco, St. Charles Parish, Louisiana
Approximate Coordinates Latitude 29 deg., 59 min., 32 sec, and Longitude 90 deg.,
24 min., 25 sec. Zone 15.

II. FACILITY AND CURRENT PERMIT STATUS

The Norco Chemical Plant – East Site is owned and operated by Shell Chemical LP (Shell). The facility is currently operating under several Part 70 permits for Boilers, Shared Sources, Pyrolysis Gasoline Project, and Butadiene Recovery Unit-Gasoline Hydrotreater Unit-Olefins Unit. Shell has gone through some changes at the management level and has sold some of the other units. This statement of basis deals with the Gasoline Hydrotreater Unit.

Gasoline Hydrotreater (GHT): Pyrolysis gasoline from Gasoline Olefins (GO-1) and Olefins Plant (OL-5) and imported pyrolysis gasoline is fed to this hydrotreater to remove dienes, acetylenes, styrene, and sulfur compounds. The unit also separates hydrotreated pyrolysis gasoline into benzene concentrate, an unhydrotreated C₅ stream, and heavy gasoline products. This unit consists of two catalytic stages. The first stage removes dienes, acetylenes, and styrene compounds. The second stage removes sulfur and olefins compounds from the benzene concentrate.

Shell Chemical LP - Norco Chemical Plant - East Site is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within Norco Chemical Plant – East Site.

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These include:

Permit No.	Unit or Source	Date Issued
2283-V2	Boiler East Unit	1/8/2009
2520-V2	Butadiene Recovery-Gasoline Hydrotreater-Olefin Units	10/23/2001
2840-V0	Pyrolysis Gasoline Project	5/30/2003
3047-V1	Shared Sources	12/5/2007

The facility submitted timely applications for renewal of Part 70 permits for all current permits.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire (EIQ) dated March 25, 2009, were submitted requesting a separate permit for the Gasoline Hydrotreater Unit with changes to the current operation. Additional information was also submitted as of June 15, 2009.

Project

The facility is now proposing GHT Project to meet the Environmental Protection Agency (EPA) Mobile Source Air Toxics (MSAT) Phase 2 final rule requirements dated February 9, 2007. This rule will limit the benzene content of the gasoline produced at the facility to an annual average of 0.62 percent by volume.

With this proposal the GHT Unit will fractionate reformat in the Depentanizer column into a low benzene C5-/C7+ and a C5/C6/C7 side draw. The low benzene C5-/C7+ stream will be routed back to Motiva Enterprises LLC. The C5/C6/C7 side draw product stream which is not sent back to Motiva Enterprises LLC will be routed to a second column and fractionated into a low benzene C5 gasoline and a concentrated benzene C6/C7 product. The low benzene C5 gasoline stream will be cooled and pumped backed to Motiva Enterprises LLC and the concentrated benzene C6/C7 will be cooled and stored in tanks prior to being shipped offsite. The C5/C6/C7 side draw or the concentrated benzene C6/C7 bottoms product may also be used as fuel in the Olefin Furnaces.

Proposed Permit

Part 70 Permit No. 3078-V0 will be a stand alone permit for the Gasoline Hydrotreater Unit. The equipment and accessories permitted in this permit are

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currently permitted in different Part 70 Operating permits. The other permits will be modified to incorporate these changes.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM ₁₀	-	-	-
SO ₂	-	-	-
NO _x	-	-	-
CO	-	-	-
VOC	240.51	130.48	- 110.03

The GHT Project impacts other Shell emissions sources currently permitted under Permit No. 2520-V2 dated October 23, 2001. The emission sources are OL-5 Furnaces (Emission Points 14-76 and 16-76), GO-1 Furnaces (Emission Points 8-73 and 9-73), other tanks, and fugitive emissions. Under the New Source Review a netting analysis was under taken based on Prevention of Significant Deterioration (PSD) regulations which utilizes a baseline actual to potential emissions analysis, projected actual emissions analysis, and includes the amount of emissions excluded which could have been accommodated consistent with the requirements of LAC 33:III.509.R.6.a.iii. In addition, the existing potential to emit has been based on the Global Settlement between State of Louisiana, Department of Environmental Quality and Shell Chemical LP (Norco, St. Rose, Geismar and Taft Sites); Settlement Tracking No. SA-AWE-06-0052, Section III.B – Air Noncompliance Self-Reporting By Respondent dated February 8, 2007.

The other emission source which will have an impact is the OL-5 Ground Flare (Emission Point 7-84). This is a control device and the baseline emissions and that could have been accommodated emissions are based on the global settlement referenced above. The netting analysis determined that the emission increase from the flare are PM₁₀, 0.12 tons per year (TPY); NO_x, 0.61 TPY; CO, 3.35 TPY; and VOC, 3.85 (total 35.10) TPY. The overall emission increases from the GHT Project are insignificant for all criteria pollutants; therefore, Prevention of Significant Deterioration (PSD) review is not required.

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the

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applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

ID No.	Requirement	Note
NA		

Prevention of Significant Deterioration/Nonattainment Review

Emissions increase due to this project is insignificant; therefore, PSD review is not required.

Streamlined Equipment Leak Monitoring Program

Overall the facility complies with LAC 33:III.Chapter 51 – Louisiana MACT Determination for Refinery Equipment Leaks (Fugitive Emission Sources) dated July 26, 1994 as approved. Other fugitive emissions not regulated under the Louisiana MACT are controlled under the appropriate federal requirements.

For the Gasoline Hydrotreater Unit, fugitive emissions are subject to the requirements of 40 CFR 60 Subpart GGG, 40 CFR 60 Subpart J, 40 CFR 61 Subpart V, 40 CFR 60 Subpart VV, LAC 33:III.2121, and LAC 33:III.5109 as appropriate.

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
[Facility Name]	40 CFR 61 Subpart J – NESHAP for Equipment Leaks (Fugitive Emissions Sources) of Benzene	≥ 10% VCM	As appropriate
	40 CFR 61 Subpart V – NESHAP for Equipment Leaks	≥ 10% VCM	
	40 CFR 60 Subparts VV – NSPS for Equipment Leaks of VOC in SOCM I or Refineries	≥ 10% VOC	
	LAC 33:III.2121 – Fugitive Emission Control for Ozone Nonattainment Areas and Specified Parish	≥ 10% VOC	
	LAC 33:III.5109 – Louisiana MACT Determination for Non-HON Sources	≥ 5% VOTAP	

MACT Requirements

The facility complies with the fugitive emissions requirement under LAC 33:III.Chapter 51 – Louisiana MACT Determination for Refinery Equipment Leaks.

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Air Quality Analysis

Emissions associated with the proposed modification were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

Permit shield was not requested by the facility

VI. PERIODIC MONITORING

Refer to the “SPECIFIC REQUIREMENTS” section of the proposed permit for details

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VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H₂S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀ – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air

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Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.